



INTRODUCTION

- American College of Surgeons **National Surgical Quality Improvement Program (NSQIP) Database** is a variable-driven, clinical database established to strengthen quality outcomes across participating institutions¹
- NSQIP provides data directly from patient medical charts, enabling robust **identification of preventable complications** using risk-adjusted outcomes of surgical interventions across hospitals¹
- Trans-institutional reporting of **pituitary tumor surgeries** is included in the dataset, and introduces an opportunity to homogenize reporting of pituitary surgery methods and complications
- However, the usability of this data depends on the accuracy of data reporting and abstraction, and inaccurate reporting diminish the potential achievable quality improvement²
- This poster aims to highlight inconsistencies in NSQIP pituitary surgery reporting to inspire more **accurate data abstraction guidelines** for pituitary patients

METHODS

- NSQIP database was queried for pituitary surgery cases from 2022 through 2023
- Data is a culmination of randomly selected cases from each NSQIP-participating institution
- For each operative approach documented, case percentages were calculated and grouped into either **“correct”** or **“misclassified”** based on the approach listed in the report
- Correctly classified data included operative approaches “Endoscopic” and “Open” as these are valid pituitary surgery methods
- Misclassified data included operative approaches “Endoscopic, Natural Orifice,” “Endoscopic, Natural Orifice Transluminal Endoscopic Surgery (NOTES),” “Percutaneous,” “Laparoscopic/ Endoscopic,” “MIS through Single incision (e.g. SILS, Uni- VATS), Natural Orifice Transluminal Endoscopic Surgery (NOTES),” “Natural Orifice Transluminal Endoscopic Surgery (NOTES),” “Natural Orifice Transluminal Endoscopic Surgery (NOTES),” “Open, Natural Orifice Transluminal Endoscopic Surgery (NOTES),” “Thoracoscopic, Endoscopic,” “Endoscopic, Other MIS,” “Other/MIS,” and “Open/Endoscopic,” as these were either approaches not used in pituitary surgery or ambiguous terminology that did not clearly specify the approach taken

REFERENCES

- ACS National Surgical Quality Improvement Program. Accessed September 15, 2025.
- Khuri SF, Daley J, Henderson WG. The comparative assessment and improvement of quality of surgical care in the Department of Veterans Affairs. *Arch Surg*. Jan 2002;137(1):20-7. doi:10.1001/archsurg.137.1.20

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RESULTS

	Operative Approach	2022 (n=187)	2023 (n=159)
Correctly Classified	Endoscopic	65 (34.76%)	66 (41.51%)
	Open	76 (40.64%)	67 (42.14%)
Misclassified	Endoscopic, Natural Orifice Transluminal Endoscopic Surgery (NOTES)	2 (1.07%)	0 (0.00%)
	Percutaneous	1 (0.53%)	0 (0.00%)
	Laparoscopic/Endoscopic	0 (0.00%)	1 (0.63%)
	MIS through Single incision (e.g. SILS, Uni- VATS), Natural Orifice Transluminal Endoscopic Surgery (NOTES)	1 (0.53%)	0 (0.00%)
	Natural Orifice Transluminal Endoscopic Surgery (NOTES)	26 (13.90%)	15 (9.43%)
	Open, Natural Orifice Transluminal Endoscopic Surgery (NOTES)	1 (0.53%)	0 (0.00%)
	Thoracoscopic, Endoscopic	1 (0.53%)	0 (0.00%)
	Endoscopic, Other MIS	2 (1.07%)	0 (0.00%)
	Other MIS	12 (6.42%)	6 (3.77%)
	Open/Endoscopic	0 (0.00%)	4 (2.52%)

Table 1. Overall, 79.2% of pituitary surgery operative approaches were correctly classified and 20.8% were misclassified. Microscopic approach may fall under “minimally invasive surgeries,” but is not clearly represented.

DISCUSSION & CONCLUSIONS

- In 2022 and 2023, the NSQIP database required manual input of operative approach for pituitary surgery
- This addition was intended to accurately capture data representing pituitary surgery cases and contribute to the evolving standard of care
- However, the inaccurate and vague inputs for operative approach made the dataset vulnerable to misclassification, undermining its validity and usability
- Microscopic approach, a widely used visual technique for pituitary surgery, is not included as an answer option in this dataset
- The standard of care for pituitary surgery is constantly evolving, which necessitates a database that clearly demonstrates the trend in operative approach utilized across institutions
- NSQIP is a tremendous tool used by physicians and researchers to advance medicine, however there is evidence that clinical information for pituitary surgery is afflicted by misclassification

FUTURE DIRECTIONS

- We recommend that for the operative approach datapoint, surgical clinical reviewers should have the option to select the CPT code assigned to each surgery
- This would clearly indicate the visual technique used (endoscopic, microscopic, or open) and if stereotactic navigation was used
- The surgical approach would be manually input (ex. trans-nasal vs trans-septal for endoscopic and microscopic), with the ability to select multiple options if required
- By limiting the answer choices and requiring further delineation between surgical approaches, this data would become more accurate and reliable, thus driving improved surgical outcomes and patient care